

***Remarks***

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-7 and 10-16 are pending in the application, with claims 1, 4, and 7 being the independent claims. Claims 21 and 22 are sought to be cancelled without prejudice to or disclaimer of the subject matter therein. Claims 1 and 4 are sought to be amended. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Applicants respectfully submit that this Amendment After Final Rejection should only require a cursory review because the claim amendments presented herein do not add any new features. Claims 1 and 4 were amended to include features of previously examined dependent claims 21 and 22 (now canceled), respectively. Consequently, the claim amendments should not require any further search by the Examiner and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

***Provisional Non-Statutory Double Patenting Rejection***

The Examiner has provisionally rejected claims 1, 2, 4, 5, 7, and 10 under the judicially created doctrine of obviousness-type double patenting for allegedly being unpatentable over claims 8 and 26 of co-pending Application No. 10/880,769.

Pursuant to MPEP Section 804(I)(B), since co-pending Application No. 10/880,769 has not become a patent, the Examiner should maintain the double patenting

rejection in this instant application as a ‘provisional’ double patenting rejection, which can be converted into a double patenting rejection when the co-pending Application No. 10/880,769 issues as a patent. Applicants will appropriately address the provisional double patenting rejection in the event it is converted to an actual double patenting rejection pursuant to MPEP Section 804(I)(B) after co-pending Application No. 10/880,769 issues as a patent.

***Rejections under 35 U.S.C. § 102***

Claims 1 and 4 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,747,992 to Matsumoto (“Matsumoto”). For the reasons set forth below, Applicants respectfully traverse.

Without acquiescing to the propriety of the rejection, Applicants have amended claims 1 and 4 solely to expedite prosecution. Specifically, claims 1 and 4 have been amended to include the subject matter of previously pending dependent claims 21 and 22, respectively. Accordingly, in regard to claims 1 and 4, Applicants will address the rejection of claims 21 and 22 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Matsumoto in view of U.S. Patent No. 6,658,024 to Okamura (“Okamura”).

Independent claims 1 and 4, as amended herein, recite:

wherein the first noise phase corresponds to a first signal-to-noise ratio, and the second noise phase corresponds to a second signal-to-noise ratio, the second signal-to-noise ratio being higher than the first signal-to-noise ratio,

wherein the second bit rate is determined based on the second signal-to-noise ratio, and

wherein the first bit rate is determined based on the second bit rate and the pre-determined maximum allowed transmission latency.

Importantly, the “second bit rate,” used to transmit symbols during the noise phase corresponding to the *higher* signal-to-noise ratio, is determined first; then, based on this “second bit rate,” as well as the “predetermined maximum allowed transmission latency,” the “first bit rate” is determined. Neither Matsumoto nor Okamura teach or suggest determining a “first bit rate” as recited in claims 1 and 4.

The Examiner contends that Matsumoto, at col. 10, lines 54-60, discloses that a first bit rate is determined based on a second bit rate and a predetermined maximum allowed transmission latency as disclosed in claims 1 and 4. (Office Action, p. 17.) In regard to col. 10, lines 54-60, Matsumoto states:

In order to reduce the delay time, the difference between the number of bits assigned to the bit map A and the number of bits assigned to the bit map B is minimized as much as possible (the delay time assumes the worst value for the minimum value of the bit map B).

As disclosed by Matsumoto, bit map A is assigned to a far-end crosstalk (FEXT) noise section and bit map B is assigned to a near-end crosstalk (NEXT) noise section, where the FEXT section has a higher signal-to-noise ratio than the NEXT section. (Matsumoto, 4:52-58 and 10:20-27.)

The number of bits assigned to bit map B is *not* disclosed by Matsumoto to have been determined based on the number of bits assigned to bit map A. Rather, in this dual bit map example disclosed by Matsumoto, the number of bits assigned to bit map B is assumed first; then, based on this assumption, the number of bits assigned to bit map A is determined. (Matsumoto, 11:6-15.) Specifically, in this particular example disclosed by Matsumoto, bit map A is assigned 3 symbols and bit map B is assigned 7 symbols. (Matsumoto, 10:31-38.) Bits are assigned to the symbols of bit maps A and B such that  $16 \times 10 = 160$  bits (i.e., the data of one 2.5 ms period) are inserted in the ten symbols.

(Matsumoto, 11:1-5.) Matsumoto, first assumes that 2 bits are assigned to each of the 7 symbols of bit map B, leaving  $160 - (2 \times 7) = 146$  bits left to be assigned. (Matsumoto, 11:6-12.) Then, Matsumoto assigns the remaining 146 bits to the 3 symbols of bit map A, such that each symbol of bit map A is assigned  $146/3 = 48.67$  bits or 49 bits. (Matsumoto, 11:12-15.)

Thus, Matsumoto first determines the number of bits assigned to bit map B, which is associated with the *lower* signal-to-noise ratio and then, based on the number of bits assigned to bit map B, determines the number of bits assigned to bit map A. This is in complete contrast to the features of claims 1 and 4, as noted above, which recite determining the “second bit rate,” which is associated with the *higher* signal-to-noise ratio and then, based on the “second bit rate,” determining the “first bit rate.”

Moreover, it is completely unclear how Matsumoto’s determines the number of bits assigned to bit map B based on a predetermined latency, as further required by claims 1 and 4. Applicant respectfully requests clarification regarding this.

Okamura does not cure the deficiencies of Matsumoto noted above. Because the combination of Matsumoto and Okamura does not teach or suggest each and every feature of independent claims 1 and 4, the combination cannot render those claims unpatentable. Accordingly, Applicants respectfully request that the rejection of claims 1 and 4 be reconsidered and withdrawn.

***Rejections under 35 U.S.C. § 103***

**Claims 2, 3, 5, and 6**

Claims 2, 3, 5, and 6, were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Matsumoto in view of U.S. Patent No. 6,801,570 to Yong (“Yong”). For the reasons set forth below, Applicants respectfully traverse.

Without acquiescing to the propriety of the asserted combination, Yong does not cure the deficiencies of Matsumoto and Okamura with respect to independent claims 1 and 4 as noted above. Consequently, independent claims 1 and 4 are patentable over the combination of Matsumoto, Okamura, and Yong. Claims 2, 3, 5, and 6 are similarly patentable over the combination of Matsumoto, Okamura, and Yong for at least the same reasons as independent claims 1 and 4, from which the respectively depend, and further in view of their own features. Accordingly, Applicants respectfully request that the rejection of claims 2, 3, 5, and 6 be reconsidered and withdrawn.

**Claim 7**

Claims 7 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Matsumoto in view of U.S. Patent No. 6,804,267 to Long *et al.* (“Long”) and Okamura. For the reasons set forth below, Applicants respectfully traverse.

Independent claim 7 recites, among other features, “a first bit rate controller for determining the first bit rate based on the second bit rate and the pre-determined maximum allowed transmission latency.” As noted above, in regard to claims 1 and 4, the combination of Matsumoto and Okamura does not teach or suggest at least this feature. Long does not cure the deficiency of the combination of Matsumoto and Okamura. Consequently, independent claim 7 is patentable over the combination of

Matsumoto, Long, and Okamura. Accordingly, Applicants respectfully request that the rejection of claim 7 be reconsidered and withdrawn.

**Claims 10 and 11**

Claims 10 and 11, were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Matsumoto in view of Long, Okamura, and Yong. For the reasons set forth below, Applicants respectfully traverse.

Without acquiescing to the propriety of the asserted combination, Yong does not cure the deficiencies of Matsumoto, Long, and Okamura with respect to independent claim 7 as noted above. Consequently, independent claim 7 is patentable over the combination of Matsumoto, Long, Okamura, and Yong. Claims 10 and 11 are similarly patentable over the combination of Matsumoto, Long, Okamura, and Yong for at least the same reasons as independent claim 7, from which they depend, and further in view of their own respective features. Accordingly, Applicants respectfully request that the rejection of claims 10 and 11 be reconsidered and withdrawn.

***Allowable Subject Matter***

Claims 14-16 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all limitations of the base claim and any intervening claims. Based on the above Remarks, Applicants submit that claims 14-16 are patentable over the art of record without being rewritten in independent form including all limitations of the base claims and any intervening claims. Therefore, it is respectfully requested that the objection to claims 14-16 be reconsidered and withdrawn.

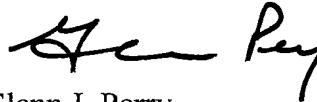
***Conclusion***

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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